Squad Up - Requirements Analysis

1. Stakeholders

Primary Stakeholders

- Participants/Users – Students, developers, and professionals seeking teammates for events.

- Event Organizers – Institutions or companies hosting hackathons, competitions, and workshops.

- Platform Administrators – Responsible for system health, moderation, and maintenance.

Secondary Stakeholders

- Sponsors – Entities funding or promoting events.

- Mentors – Industry professionals providing guidance during events.

- Educational Institutions – Universities encouraging participation and event collaboration.

2. Goals and Problems

Problems for Participants
- Difficulty finding suitable teammates before registration deadlines.

- Fragmented communication channels (Discord, WhatsApp, etc.).

- Lack of centralized event discovery.

- Missed opportunities due to scattered event information.

Problems for Organizers

- Time-consuming manual team verification and tracking.

- Inconsistent communication with participants.

- Limited tools to evaluate event success.

Problems for Admins
- Need for scalable infrastructure and efficient moderation tools.

Platform Goals

- Provide a unified hub for event-based team formation.

- Enable real-time collaboration via integrated chat.

- Offer comprehensive analytics for organizers.

- Ensure scalability, security, and an intuitive user experience.

3. Target Users

College Students (18–25 years) -

Participate in hackathons and coding competitions.

- Need to form teams quickly and efficiently.

- Aim to build portfolios and gain networking opportunities.

Hobbyists & Developers (20–35

years) - Engage in virtual events and online

hackathons.

- Seek flexible collaboration and skill development.

Event Organizers

- Require efficient participant management tools.

- Need insights into team formation and event engagement.

Platform Administrators

- Manage system operations, user reports, and moderation.

4. User Personas

Priya – The Eager Participant

- 21-year-old CS student seeking teammates for an upcoming hackathon.

- Wants to collaborate without juggling multiple platforms.

- Pain Points: chaotic communication, lack of transparency in team formation.

Rohan – The Event Organizer

- 28-year-old university fest coordinator managing 200+ participants.

- Goals: streamline team verification, monitor registrations, and improve engagement.

Alex – The Solo Developer

- 26-year-old freelance developer joining online hackathons.

- Needs to find teammates fast, with transparent expectations and relevant skill sets.

5. Prioritized User Stories

Phase 1: MVP (Core Features)

1. Authentication: Sign up, login, logout with JWT and secure sessions.

2. Profile Management: Create and edit profiles with skills, interests, and photouploads.

3. Event Discovery: Browse, search, and view event details.

4. Team Management: Create, join, or leave teams; approve requests.

5. Real-Time Chat: Team messaging with WebSocket-based updates.

Phase 2: Enhanced Features

6. Notifications: In-app and email notifications for invites, updates, and deadlines.

7. Organizer Tools: Event creation, approval workflows, and analytics dashboards.

Phase 3: Future Enhancements

8. AI Team Recommendations, Post-Event Ratings, and Sponsor Bounties.

6. Functional Requirements

Authentication & Authorization

- Email-based signup, verification, password reset.

- JWT-based secure login and role-based access.

User Profiles

- Editable user bios, skills, and social links.

- Profile visibility settings and image uploads.

Event Management

- CRUD operations for events with filtering and categories.

- Registration tracking and team management per event.

Team Management

- Team creation, invites, approvals, and status tracking.

- Automatic chat creation for each team.

Real-Time Communication

- WebSocket-powered chat with typing indicators, timestamps, and message persistence.

Notifications

- In-app alerts, email updates, and unread indicators.

Analytics

- Dashboards showing participation, engagement, and exportable reports.

Administration

- Account management, moderation tools, and system monitoring.

7. Non-Functional Requirements

Performance & Scalability

- Page load under 2 seconds for 90% of users.

- Handle 1,000+ concurrent WebSocket connections.

- Horizontal scaling and CDN integration.

Security & Privacy

- Enforce HTTPS/TLS.

- Password hashing (bcrypt).

- Rate limiting on authentication routes.

- GDPR-compliant user data management.

Usability & Accessibility

- Fully responsive design (320px–1920px).

- WCAG 2.1 Level AA accessibility.

- Clear navigation and onboarding tutorials.

Maintainability & Reliability

- Modular codebase, API documentation (Swagger).

- Automated backups and error tracking.

8. Acceptance Criteria (Summary)

Feature	Acceptance Test
Registration	Account creation and verification email sent
Profile Setup	Profile saved and visible on dashboard
Event Discovery	Filtered events displayed with correct data
Team Creation	Team appears under event listing and chat enabled
Chat	Real-time message sync and persistence verified
Notifications	In-app and email alerts delivered

| Analytics | Organizer dashboard displays accurate stats |

9. Success Metrics

| Category | Metric |

| Adoption | 1,000+ users, 10+ hosted events |

| Engagement | 20+ messages/team/event, 50% daily active users |

| Retention | 40% returning users, 80% team formation success |

| Technical | 99.5% uptime, <200ms message latency |

| User Satisfaction | 4+ star rating, <5% support ticket rate |

10. Out of Scope (Future Plans)

- Video conferencing integration.

- AI-based matchmaking.

- Mobile applications.

- Payment systems and sponsorship dashboards.

- Multi-language support.

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